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| 10/650,162 | 08/28/2003 | Isao Sakurai | 6667/28 | 7065 |

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| EXAMINER | |
|---|---|
| NORDMEYER, PATRICIA L | |
| **ART UNIT** | **PAPER NUMBER** |
| 1794 | |

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| 12/11/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/650,162 | SAKURAI ET AL. | |
| | Examiner | Art Unit | |
| | Patricia L. Nordmeyer | 1794 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *07 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,3-13,15-18,20,21 and 23-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-13,15-18,20,21 and 23-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Withdrawn Rejections*

1. Any rejections and or objections, made in the previous Office Action dated August 7, 2007, and not repeated below, are hereby withdrawn due to Applicant's amendments and arguments in the response dated November 7, 2007.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3 – 5, 8, 10, 11, 16 – 18, 20, 21, 23, 25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennen (USPN 6,982,107) in view of Miyake et al. (USPN 4,471,103).

Hennen discloses a pressure sensitive adhesive article (Column 1, lines 7 – 8) comprising a pressure sensitive adhesive layer (Column 8, line 12) mainly formed of polyurethane resin (Column 8, line 16) and free of silicone compound in an amount of 500 g/m$^2$ or less (Column 8, lines 12 – 57) and a releasing agent layer mainly formed of polyolefin resin (Column 3, lines 60 – 65) selected from polyethylene, polypropylene, ethylene $\alpha$ copolymers, olefin based thermoplastic elastomer and mixtures thereof (Column 3, lines 25 – 45; Column 6, lines 15 – 23)

having a density equal to or less than 0.94 g/cm$^3$ (Column 5, lines 62 – 67), which inherently has a numerical average molecular weight of about 15,000 to about 500,000 determined by GPC based on the composition, adhered to the pressure sensitive adhesive layer (Column 3, lines 12 – 13), wherein the releasing agent layer that faces the pressure sensitive adhesive layer has a tension of almost zero, thereby being less than 22mN/m (Column 7, lines 26 – 46) as in claims 1 – 3, 5, 11 and 16. With regard to claims 4 and 8, the pressure sensitive adhesive sheet includes a base material of plastic film on which the pressure sensitive adhesive is provided (Column 3, lines 25 – 27), and the release sheet includes a release sheet base material on which the releasing agent layer is provided (Column 4, lines 65 to Column 5, line 1; Column 6, lines 42 – 46), the release sheet being removable attached to the pressure sensitive adhesive layer of the pressure sensitive adhesive sheet through the releasing agent layer thereof (Column 7, lines 26 – 46). As in claim 10, the pressure sensitive adhesive article is a tape (Column 8, lines 67 to Column 9, line 1), which comprises a base material having both surfaces with a pressure sensitive adhesive on side and a releasing agent layer on the other being would into a roll form until it is used (Column 9, lines 1 – 3; Column 7, lines 56 – 67). The polyolefin resin is selected from the group consisting of a polyethylene resin whose density is 0.9 to 0.922 g/m$^2$ (Column 5, lines 62 – 67) and an olefin based thermoplastic elastomer whose density is 0.86 to 0.88 g/m$^2$ (Column 6, lines 21 – 23), wherein the thermoplastic elastomer is an ethylene-octene copolymer (Column 6, lines 15 – 21) as in claims 17 and 18. With regards to claims 20 and 21, an adhesion enhancing layer is provided between the release sheet base material and the release agent layer, wherein the release sheet base material is a plastic film (Column 3, lines 25 – 27) and the adhesion enhancing layer is made of polyethylene resin (Column 4, lines 53 – 60). However, Hennen fails to

disclose the polyurethane resin being obtained by reacting polyol and polyisocyanate, the polyol comprising at least one of polyester polyol and polyether polyol, and the polyisocyanate comprising at least one of aromatic polyisocyanate, aliphatic polyisocyanate, aromatic-aliphatic polyisocyanate and alicyclic polyisocyanate, and wherein the amount of the polyisocyanate to be compounded with respect to 100 parts by weight of the polyol is in the range of 1 to 30 parts by weight, the polyol being polyether polyol, the polyisocyanate being alicyclic polyisocyanate, the mole equivalent of isocyanate group of the polyisocyanate with respect to one mole equivalent of active hydrogen contained in hydroxyl group of the polyol that can react with the isocyanate group is larger than 1 and the mole equivalent of isocyanate group of the polyisocyanate with respect to one mole equivalent of active hydrogen contained in hydroxyl group of the polyol that can react with the isocyanate group falls within the range of 1.40 to 3.00.

Miyake et al. teach a the polyurethane resin being obtained by reacting polyol and polyisocyanate, the polyol comprising a polyether polyol, and the polyisocyanate comprising aromatic or aliphatic polyisocyanate, wherein the amount of the polyisocyanate to be compounded with respect to 100 parts by weight of the polyol is in the range of 1 to 30 parts by weight (Column 10, lines 33 - 52) and the mole equivalent of isocyanate group of the polyisocyanate with respect to one mole equivalent of active hydrogen contained in hydroxyl group of the polyol that can react with the isocyanate group falls within the range of 1.40 to 3.00 (Column 10, lines 33 – 52) for the purpose of forming a pressure sensitive adhesive that has excellent heat resistance and stable adhesion (Column 1, lines 45 - 47).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the polyurethane resin being obtained by reacting polyol and polyisocyanate in Hennen in order to form a pressure sensitive adhesive that has excellent heat resistance and stable adhesion as taught by Miyake et al.

With regard to the release agent having a numerical average molecular weight of about 15,000 to about 500,000 determined by GPC based on the composition, it is inherent that the polyolefin resin of Hennen would meet the numerical average molecular weight as claimed since the releasing agent is selected from polyethylene, polypropylene, ethylene α copolymers, olefin based thermoplastic elastomers and mixtures thereof (Column 3, lines 25 – 45; Column 6, lines 15 – 23) having a density equal to or less than 0.94 g/cm3 (Column 5, lines 62 – 67), which overlaps the Applicant's claimed characteristics of the releasing agent layer as shown by the limitations presented by claim 17. Therefore, it would be inherent that the polyolefin resins of the release agent of Hennen would have a numerical average molecular weight of about 15,000 to about 500,000 determined by GPC based on the composition.

With regard to the limitation of the polyisocyanate being alicyclic polyisocyanate, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use alicyclic polyisocyanate, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. MPEP 2144.07.

4. Claims 6, 7, 9, 12, 13, 15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennen (USPN 6,982,107) in view of Miyake et al. (USPN 4,471,103) as applied to claims 1, 3 – 5, 8, 10, 11, 16 – 18, 20, 21, 23, and 25 above, and further in view of Shikinami et al. (USPN 4,855,077).

Hennen, as modified with Miyake et al., discloses a pressure sensitive adhesive article (Column 1, lines 7 – 8) comprising a pressure sensitive adhesive layer (Column 8, line 12) mainly formed of polyurethane resin (Column 8, line 16) and free of silicone compound in an amount of 500 $g/m^2$ or less (Column 8, lines 12 – 57) and a releasing agent layer mainly formed of polyolefin resin (Column 3, lines 60 – 65) selected from polyethylene, polypropylene, ethylene $\alpha$ copolymers, olefin based thermoplastic elastomer and mixtures thereof (Column 3, lines 25 – 45; Column 6, lines 15 – 23) having a density equal to or less than 0.94 $g/cm^3$ (Column 5, lines 62 – 67), which inherently has a numerical average molecular weight of about 15,000 to about 500,000 determined by GPC based on the composition, adhered to the pressure sensitive adhesive layer (Column 3, lines 12 – 13), wherein the releasing agent layer that faces the pressure sensitive adhesive layer has a tension of almost zero, thereby being less than 22mN/m (Column 7, lines 26 – 46). However, the modified Hennen fails to disclose the amount of the gas generated from the pressure sensitive adhesive sheet is equal to or less than 20 $mg/m^2$, the pressure sensitive adhesive sheet contains ions from a select group in an amount equal to or less than 20 $mg/m^2$ and an antistatic layer provided on one or both of the surfaces of the base material.

Shikinami et al. teach an antistatic layer provided on one or both of the surfaces of the base material (Column 4, lines 62 – 64) in combination with ions from a select group in an amount equal to or less than 20 mg/m$^2$ (Column 13, lines 10 – 26) in a pressure sensitive adhesive article, wherein the article is a pressure sensitive adhesive tape which comprises a base material having both surfaces, the pressure sensitive adhesive layer provided on one of the surfaces of the base material and the releasing agent layer provided on the other surface of the base material, wherein the pressure sensitive adhesive tape being wound in a roll form until it is used (Column 4, lines 57 – 58) for the purpose of using the adhesive material as a sticking agent for sticking tapes having an antistatic sticking layer in the fields of industry, agriculture, packaging and electronics (Column 1, lines 30 – 33).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the ions from the select group and an antistatic layer in the modified Hennen in order to have a adhesive material as a sticking agent for sticking tapes having an antistatic sticking layer in the fields of industry, agriculture, packaging and electronics as taught by Shikinami et al.

In regards to the limitations of a wet tension test defined by JIS K 6768, the amount of the gas generated from the pressure sensitive adhesive sheet is equal to or less than 20 mg/m$^2$ in claims 1 – 3, 6, 12 and 15, one of ordinary skill in the art would have recognized the claimed pressure sensitive article would have a wet tension test defined by JIS K 6768, the amount of the gas generated from the pressure sensitive adhesive sheet is equal to or less than 20 mg/m$^2$ since

Hennen teaches a pressure sensitive article having the same parameters as the claimed invention. Therefore, one of ordinary skill in the art would readily determine the tension, density and amount of gas generated depending on the end desired results in the absence of unexpected results.

5. Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennen (USPN 6,982,107) in view of Miyake et al. (USPN 4,471,103) as applied to claims 1, 3 – 5, 8, 10, 11, 16 – 18, 20, 21, 23, and 25 above, and further in view of Crandall (USPN 5,645,938).

Hennen, as modified with Miyake et al., discloses a pressure sensitive adhesive article (Column 1, lines 7 – 8) comprising a pressure sensitive adhesive layer (Column 8, line 12) mainly formed of polyurethane resin (Column 8, line 16) and free of silicone compound in an amount of 500 $g/m^2$ or less (Column 8, lines 12 – 57) and a releasing agent layer mainly formed of polyolefin resin (Column 3, lines 60 – 65) selected from polyethylene, polypropylene, ethylene $\alpha$ copolymers, olefin based thermoplastic elastomer and mixtures thereof (Column 3, lines 25 – 45; Column 6, lines 15 – 23) having a density equal to or less than 0.94 $g/cm^3$ (Column 5, lines 62 – 67), which inherently has a numerical average molecular weight of about 15,000 to about 500,000 determined by GPC based on the composition, adhered to the pressure sensitive adhesive layer (Column 3, lines 12 – 13), wherein the releasing agent layer that faces the pressure sensitive adhesive layer has a tension of almost zero, thereby being less than 22mN/m (Column 7, lines 26 – 46). However, the modified Hennen fails to the polyurethane-urea resin.

Crandall teaches a binder layer made of a polyester and a polyisocyanate that contains at least two isocyanate groups bonded non-conjugatively to at least one aromatic nucleus wherein the polymer may also contain urea (Column 3, lines 25 – 34) for the purpose of forming a binder that is flexible and has hydrolytic stability (Column 2, lines 50 – 56).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the polyurethane-urea resin in the adhesive in the modified Hennen in order to form a binder that is flexible and has hydrolytic stability as taught by Crandall.

***Response to Arguments***

6. Applicant's arguments with respect to claims 1, 3–13, 15-18, 20, 21 and 23-26 have been considered but are moot in view of the new ground(s) of rejection.

In response to Applicant's argument that the prior art fails to provide the desired molar ratio of the components of the polyurethane resin, please see the newly presented rejection above.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Crandall discloses that it is known to a binder layer made of a polyester and a polyisocyanate that contains at least two isocyanate groups bonded non-conjugatively to at least one aromatic nucleus wherein the polymer may also contain urea (Column 3, lines 25 – 34). The fact that Crandall is in a different technical field is irrelevant has Crandall discloses it is known to use the adhesive in article, and a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Nordmeyer whose telephone number is (571) 272-1496. The examiner can normally be reached on Mon.-Thurs. from 10:00-7:30 & alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L. Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia L. Nordmeyer
Examiner
Art Unit 1794

pln